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ABSTRACT

An approach to research that was conceptualized with the idea of replicating one study in dozens of locations simultaneously is described, focusing on two research projects with simultaneous replication. In 1988 researchers in 85 locations collected data in 276 schools as part of the Phi Delta Kappa Study of Schools At Risk. In 1982, data were collected in 106 schools in 41 communities as part of the Kappa Delta Pi Good Schools Project. In both studies, data were collected with identical instruments and identical procedures, and analyzed site by site in identical ways. The work of the Students At Risk project is summarized to provide an understanding of the methodology. To assure commonality, the project began with preparation of a manual of instructions. Participants met in advance of the study for training and to become familiar with the manual. Data files were analyzed in aggregated and disaggregated form, the disaggregated form being the simultaneous replication. Researchers at each site received all of the data from all of the sites. An attachment presents a section of the manual. Appendix A contains the matrix data sheet, and Appendix B contains instructions for recording information. (SLD)

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# Replication: A New Look at an Old Idea

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ED360338

## Introduction

The purpose of this paper is to describe an approach to research that was conceptualized with the idea of replicating one study in dozens of locations simultaneously: simultaneous replication. (1)

Replication is an important concept in the history and theory of science. The dictionary defines replicate as "to duplicate, copy, or repeat." Simultaneous replication means to duplicate, copy, or repeat a research study several times within the same time period. Simultaneity is not as important as replication, but added to the idea of replication, it enhances credibility of the process by eliminating that which sometimes contaminates research results: variations in the use of time.

Replication is important because it is how scientists verify research results. If a scientist reports findings that other scientists cannot verify when they replicate the study, the original findings are questioned. If a scientist reports a study, and if other scientists use the same definitions, procedures, and design and get the same results, then the findings in the first study are supported and researchers can have confidence in the results.

Replication is also important because it guarantees accountability. "If a researcher misrepresents the facts or even lies," the argument goes, "that person will be found out when the study is replicated."

Replication requires precise duplication of methods, instruments, and time lines if the concept is honored. That kind of duplication is easier to achieve in the physical sciences than in the social sciences and education. Researchers in education seldom use exactly the same instruments or procedures or time lines that other researchers use; in fact, they often modify the instruments or procedures to fit circumstances unique to their own situation. Subsequent researchers usually try to improve what the first researcher did, but variations in practice always mean that replication does not occur.

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Researchers in education try to design studies as carefully as they can, then trust that a number of studies on the same problem will "add up" over time, even though the various studies will probably be done in different ways. Meta-analysis is one technique that has been developed to increase confidence in generalizations made from many different studies without replication. Meta-analysis is an important contribution, but it is not replication. This paper describes two research projects in which simultaneous replication was employed.

In the fall of 1988, researchers in 85 locations collected data in 276 schools as part of the Phi Delta Kappa Study of Students At Risk. (2) In 1982, data were collected in 106 schools in 41 communities as part of the Kappa Delta Pi Good Schools Project. (3) In both studies, data were collected with identical instruments and identical procedures, and data were analyzed, site by site, in identical ways. Data were also aggregated and analyzed in both studies in other ways. The emphasis on identical data collection instruments and procedures, and identical data analysis procedures, site by site, represents what is described here as "simultaneous replication" in educational research. The general model used to accomplish simultaneous replication in both of these research projects is well known: standardized achievement testing.

Over the years, test publishers and researchers have developed instruments, manuals, and experience that enable educators to assess students' achievements in widely separated geographical settings in identical ways. Publishers have "standardized" testing instruments, instructions, time limits, scoring, and interpretation procedures, so schools that use the same standardized test to assess their students' achievements actually engage in simultaneous replication, but they seldom view it that way.

Because the instruments produced by most test publishers are usually developed with great care, because the tests are reliable, because the manuals are explicit, and because the procedures for administering the instruments and scoring the tests have been standardized, most people have confidence in the results of such testing. Uniformity, explicitness, reliability, and standardization are the keys.

Those who assumed responsibility for conceptualizing and coordinating the Phi Delta Kappa Study of Students At Risk and the Kappa Delta Pi Good Schools Project accepted these characteristics of standardized testing as important qualities to be achieved in data collection and data analysis. Uniformity, explicitness, reliability, and standardization were assumed to be important to the success of both projects. Everything possible was done to achieve those goals.

Accomplishing simultaneous replication by standardizing instruments and procedures was achieved in three ways: a manual

of instructions was prepared, participants were trained to collect data (this was not done in the Good Schools Project), and data were analyzed in common ways by one person at one location. In the Study of Students At Risk, participants were also trained to analyze the data collected in their local schools and to interpret those analyses. These three points are described in the next section as factors that made simultaneous replication possible. To facilitate understanding, only the work accomplished in the Phi Delta Kappa Study of Students At Risk will be described here.

## Assuring Commonality

Manual of Instructions Was Prepared: The Phi Delta Kappa Study of Students At Risk focused on four questions: who is at risk, what are they like, what are schools doing to help, and how effective are those efforts? The committee of researchers that coordinated the Phi Delta Kappa Study of Students At Risk developed a manual of instructions for use by researchers at the local level to study those four questions. (4) The manual was 140 pages long. It was explicit. Every participating chapter of Phi Delta Kappa used the same manual of instructions, and that manual was the standardizing element--the common denominator--in this research project.

The manual was divided into 13 parts. Each part was labeled a "job". Each job consisted of several "tasks" that had to be accomplished in a particular sequence in order for the job to be completed. The jobs addressed the variable or cluster of variables that comprised the focus of the study (e.g., characteristics of students at risk, teachers' descriptions of classroom practice). Each task specified operational procedures, time lines, precise instructions for recording information, and ways to cope with difficulties that might arise in data collection. For purposes of illustration, Appendix A includes a complete description of Job 8, "Collecting Information About Students," as part of the manual that was employed in the study.

After the first draft of the manual was developed, the data-collection portions were field-tested in one school. Following that, major modifications were made. The manual was then duplicated, assembled in three-ring binders, and mailed to participating chapters one month before the three-day training session. Local researchers were directed to read the manual before they came to the training session in Kansas City.

Training: Participants met for three consecutive days of training in early October 1988, and the manual served as a textbook for the training. During the training sessions, each participant spent at least one hour in a small group setting receiving detailed instructions about how to do each job. The instructions were provided by the person who had primary responsibility for developing that portion of the manual.

Discussions centered on the exact wording of the manual, what the terms meant, what to do in the event of difficulty, and the like.

At the end of the training session, minor changes were made in the manual as a result of what had been learned during the three days of training. Each proposed change was first discussed at length by members of the coordinating committee. Changes that were agreed upon were then presented to all participants at a final general session, and participants recorded the changes line-by-line in their own manuals. The next week, copies of pages that had been changed were mailed to each participating local researcher.

The manual served as a constant throughout this study. Following the explicit instructions in the manual, local researchers collected data in 276 schools in 85 communities between October 10 and December 15, 1988. Researchers used common definitions and common procedures to collect the data, and data were recorded in uniform ways, all according to instructions in the manual.

Data Analyzed in Common Ways: Most of the data collected in this study were recorded in numeric form. Some of the verbal and non-objective data (e.g., data from case studies that included videotapes and narratives) were handled by rules common for qualitative research, but according to explicit directions in the manual in how to do that job.

For example, student information data forms were completed by researchers who coded information provided by teachers who knew each student well and who had access to each student's record in the school. Those forms were scanned optically, and the resultant data were recorded on computer tapes and organized according to an 80-column format, with the number of lines for each record specified, according to the information to be included at that point in the data file. All data files were chapter (i.e., local) level files. Finally, every data file was visually scanned to verify that appropriate information was recorded in the appropriate columns and that each record included the appropriate number of lines.

Once the data files were readied, two kinds of analyses were accomplished. In one, the data were aggregated and handled as one data set. In the second, the data were dealt with in disaggregated form, school by school, and community by community. This paper describes the second set of analyses, referred to here as "simultaneous replication."

For purposes of simultaneous replication, data were analyzed with SPSS by creating one program, and then running that same program for each school's data and each community's data, by grade level. Hundreds of separate analyses were accomplished: multiple regression, correlation, comparison of mean scores, chi

square analysis, and the like. Each analysis was of a reasonably small sample (i.e., N = 75 or so).

All together, there were 276 samples of students and 276 samples of teachers subjected to various statistical analyses. In each analysis, a program to accomplish a particular statistical analysis was prepared, then that program was run separately for each of the 276 schools. None of the results are reported here, but all suggest the usefulness of this approach.

The idea of simultaneous replication, as described in this paper, refers to two things: data were collected in different schools in different communities in identical ways with identical instruments, and each data set was analyzed in identical ways on the same computer by the same person.

This last point--analysis of all data sets by one person in one place--is a deviation from the idea of replication as generally practiced in science. Even though the same problem was studied in different schools in various communities with the same instruments in identical ways, the fact that one person analyzed the data for all of the schools may suggest that that one person might err, knowingly or unknowingly. In that way, the confidence that generally accrues to research findings as a result of independent replication was not assured.

To guard against such a possibility, researchers at 19 chapters of Phi Delta Kappa received all of the data sets from all of the chapters. These researchers were encouraged to analyze the data sets in whatever ways seemed appropriate and reasonable to them. In addition, other people critiqued the process.

## References


1. Jack Frymier, et al., "Simultaneous Replication: a Technique for Large-Scale Research," Phi Delta Kappan, vol. 71 (November,1989). pp. 228-231.

2. Jack Frymier, Growing Up Is Risky Business and Schools Are Not to Blame, vol. 1, 246 pp.,and Assessing and Predicting Risk Among Students in School, vol. 2, (Bloomington, IN: Phi Delta Kappa, 1992), 351 pp.

3. Jack Frymier, et al., One Hundred Good Schools (West Lafayette, IN: Kappa Delta Pi,1984), 320 pp.

4. Jack Frymier, et al. Manual of Instructions (Bloomington, IN: Phi Delta Kappa, 1988),140 pp.

## Job 8: Collect Information About Students

Each chapter participating in the Phi Delta Kappa Study of Students At Risk will accomplish thirteen big jobs between August 1, 1988, and June 1, 1989.

1. form a research committee
2. select three schools in the chapter's area
3. prepare (Kansas City training and local training)
4. interview the principal of each school
5. survey the teachers in each school
6. apply "Holding Power Statistic" in the high school
7. write a narrative report about each school
8. collect information about students in each school
9. do a case study of one student
10. do at least one optional project
11. (perhaps) do further analyses of data
12. discuss the data at a district-level meeting
13. disseminate research results

Jobs 1 and 2 must be accomplished before October 1st. Jobs 3 through 8 must be completed before December 1, 1988. Jobs 9 and 10 must be finished before February 1, 1989. Jobs 11 and 12 must be accomplished before June 1, 1989.

One of the most important jobs in the study will be to collect information from teachers and others about 100 students in each of three schools. This information will be used to determine the extent to which students are at risk. The instructions in the document you are now reading pertain only to Job 8: Collect Information About Students in Each School. To collect this information, you must accomplish six tasks:

1. specify the students to be studied
2. meet with professionals who know the students best
3. review the information available about each student
4. record the information on a matrix data sheet
5. transfer information to an "answer blank" form
6. ask the principal to keep the matrix data sheets

Each of these six tasks is described below.

Task 1, Specify the Students To Be Studied: You will collect data on about 300 students. After you select three schools--one elementary school, one junior high or middle level school, and one senior high school--collect data on about 100 students in each of those schools: 100 fourth graders, 100 seventh graders, and 100 tenth graders. If there are less than 100 fourth graders in the school selected, study all of the fourth graders, then divide what remains from 300 between the seventh and tenth grade so equal numbers of seventh and tenth

grade students will be studied. Or, if there are fewer than 300 students in the three grade levels specified, study all of the students at those grade levels in the schools that you select.

For example, if the elementary school you selected has three classrooms of fourth graders--about 75 students--study all of those fourth graders, then study 110 seventh graders and 115 tenth graders, or something close to that. Such a process means that you would study approximately 300 students in all.

Study students who are in intact groups, wherever possible (i.e., classroom groups), and select groups in which students are generally thought of as "typical" for that school (e.g., seventh grade Social Studies students or tenth grade English students).

Just as you were directed in Job 2 not to select special schools, do not select students who are in special groups for inclusion in this study. Do not select students who have been assigned full time to classrooms for the mentally retarded, for example. Do not select students who are assigned full time to programs in alternative schools. Select "typical" students in the school.

Confer with the principal about these matters. Arrange with the principal, also, to meet with the people who are most directly responsible for working with each of the 100 or so students. Those people must have access to information that the school has available about each student.

Task 2, Meet With the Teachers and Other Professionals Who Know the Students Best: Schedule a meeting with the teachers and others who are most knowledgeable about the students involved. At the elementary level, that probably means meeting with a classroom teacher (and perhaps a guidance counselor) regarding all of the students in that one teacher's classroom. At the junior high or senior high school level, meeting with teachers and other professionals who know the students best probably means meeting with English teachers or homeroom teachers and the guidance counselor.

The people with whom you meet must have access to the students' cumulative folders, and they must have access to such things as attendance data, achievement data, family situation, and the like. The Phi Delta Kappa research team will not need to have direct access to that information, but the teachers and others in the building must be able to provide information to the research team that is accurate and current.

Task 3, Review the Information Available About Each Student: One or two members of the Phi Delta Kappa research team and one or two teachers or other professionals in the building should meet together and review the data available about each student included in the study. Schedule enough time to complete the task at one sitting, if possible.

In preparing the teachers and others for this project, describe the process by which data will be collected about each student and how those data will be recorded. Briefly, the process will be as follows:

a. each student will be identified by name and number
b. information about each student will be recorded
c. information will be transferred to an "answer blank"
d. the school will keep the information record
e. Phi Delta Kappa will keep the "answer blank"

The Phi Delta Kappa research team will provide each school with special matrix data sheets on which to record information about students. Each student will be listed by name and assigned a number. Information about each student will be recorded on the matrix data sheets. When all students have been studied (i.e., information obtained from teachers and others about each student), the student's assigned number and information about the student will be transferred to a data processing "answer blank" by the research team.

The school will keep the matrix data sheets on which students are listed by name, and Phi Delta Kappa will keep the "answer blanks" on which students are identified only by number. If additional information is needed about a particular student at some point in the future, it will be possible to go back to the matrix data sheet and identify the student by name.

The principal should be asked to keep the matrix data sheets in case of an eventuality such as described above. More importantly, however, the principal should be asked to keep the matrix data sheets for future research possibilities. Explain that this project is funded as a "one time" research effort. Our hope, however, is to go back to these same schools in two to five years and follow up on the students who are identified as being at risk. We are presently planning a longitudinal study of these same students, so it will be important for the school to maintain the matrix data sheets for research in future years.

Task 4, Record the Information on a Matrix Data Sheet: Attached to this document (see Appendix A) is one copy of a "matrix data sheet." Information about fifteen students can be recorded on each matrix data sheet. Your packet of materials

includes 30 copies of this sheet, enough for you to record all necessary information on more than 100 students in each of three schools.

First, turn the sheet so that the factors (i.e., ID Number, Date of Birth, Sex) are listed down the left hand side of the page, and the blank space for names of students is positioned at the top of the page.

Second, write the names of each student about whom you will be collecting information in the blank spaces at the top of the page.

Third, assign each student an "ID Number," beginning with "001" for the first student up through "075", if there are 75 students at the grade level you will be studying. You will be recording information about students from three different schools, but always begin ID Numbers with "001" for each school. (Note: Since the "PDK Chapter Number" and "Grade Level" information will be recorded on each answer blank, we will always know the school from which the data came.)

Fourth, review all of the information available to the teachers and others who are meeting with you, and fill out the matrix data sheet completely, according to the instructions outlined in "Appendix B, Instructions for Recording Information About Each Student" that is appended to this document.

You will note that there are more than 60 areas for which information is requested for each of 100 students at each grade level. In practical terms, you will record about 6000 "bits" of information for students at each grade level. Viewed that way, the task appears formidable. However, much of the information will be easy to specify (e.g., sex, ethnicity), so part of the activity will proceed very quickly. Certain information requests will require your group to search records carefully (e.g., number of schools attended, reading level, number of absences last year).

The PDK research team members should process the discussion, ask helpful questions, and record the data. The teachers and others who know the student well should check the records and provide information. The group should try to reach consensus on the basis of the best information available, after which you should record the data on the matrix data sheet, according to the instructions spelled out in "Appendix B". (Note: If the information is not available--in the student's folder, in the school's records, or in the teacher's experience--leave that cell in the matrix blank.

Fill out the matrix data sheet carefully. Information must be recorded correctly. We cannot do an "excellent" study with "poor" data.

Task 5, Transfer Information to an "Answer Blank" Form: After you have indicated the status of each student on each factor on the matrix data sheet, fill out one optical-scan "answer blank" for each student with a No. 2 lead pencil.

Two people from the PDK research team should work together to transfer information from the matrix data sheet to the optical scan "answer blank" to avoid error. One person can read from the matrix data sheet, saying aloud "Item number one, 001," then "Item number two, 7809," then "Item number three, 1," and so on, to the end. The other person can enter the number of the Phi Delta Kappa chapter (e.g., 0079) in the space provided, then mark the appropriate spaces on the answer blank, according to the information provided by the person reading from the data sheet.

You may be tempted to record information directly onto the answer blank. Do not do that. If you record the data onto an answer blank directly, the school will not have a summary of information about the students in that school, and it would not be possible to go back to that school for research purposes in future years. Also, the possibility of error would be increased.

Task 6, Ask the Principal to Keep the Information: When you have finished transfering the information from the matrix data sheet to answer blanks, one for each student, give the compiled information on the matrix data sheets to the principal. Ask that person to keep the information in his or her files.

By asking the principal to keep the information in the school, you are demonstrating clearly and convincingly that you are not taking information out of the school that would enable anyone to learn anything about a particular student. Students cannot be identified without access to the matrix data sheets maintained in the school. Confidentiality will be assured.

Tell the principal that you will return to the school after the data have been analyzed, and you will share with him or her whatever you learn about the students and about the school from the data collected.

Thank the principal and teachers for all they have done.

Appendix A -- Matrix Data Sheet

1 ID Number

2 Date of Birth

3 Gender

4 Grade Level

5 Ethnicity

6 Father's Occupation

7 Father's Education

8 Mother's Occupation

9 Mother's Education

10 Number of Siblings

11 Position in Family

12 Sibling Drop Outs

13 Family Grouping

14 Language Used

15 Parent's Attitudes

16 Place of Residence

17 Schools Attended

18 Achievement Tests

19 Intelligence Tests

20 Courses Failed

21 Age re/Grade Level

22 Retained

23 Attendance

24 Suspended

25 Expelled

26 Extra-Curricular

27 Self-Esteem

28 Grades

29 Change of Residence

30 Change of Schools

31 Parent's Health

32 Death of Parent

33 Parent Attempted Suicide

34 Parent Lost Job

35 Divorce/Separation

36 Death of Close Friend

37 Serious Illness/Accident

38 Death of Sibling

39 Dropped from Athletic Team

40 Attempted Suicide

41 Pregnancy Occurred

42 Uses Drugs

43 Sells ("pushes") Drugs

44 Family Uses Drugs

45 Student Uses Alcohol

46 Parent Alcoholic

47 Drunk Driving

48 Arrested/Convicted

49 Special Education

50 Special Teachers

51 Smaller Class

52 Computer

53 Referred/Special Ed

54 Lower Group

55 Individualized

56 Flexible Schedule

57 Tutor

58 Homework

59 Parents Involved

60 Basic Skills

61 Referred/Psychologist

62 Special Materials

# Appendix B

## Instructions for Recording Information About Students

Listed below are instructions for recording information about each student on each item of the data matrix sheet. Follow these directions carefully. Each item is listed separately, and the exact instructions about what to record in each cell of the matrix is described.

Enter a value in the appropriate cell of the matrix, according to the directions listed below. If the teachers who work with these students most closely do not know, or if there is no information available, leave the cell blank.

After you have finished recording information about each student studied, transfer the information to an "answer blank" for each student, and put your chapter number on the answer blank in the appropriate space so we will know exactly where the data came from. We will not be able to provide printouts to your chapter unless you put the chapter number on each student's answer blank.

Note again: If the information is not available and if none of the teachers or others know exactly what the facts are in a given instance, leave that item unmarked (i.e., "blank"). When you transfer information to the "answer blank" later, do not put any marks on the answer blank for items on which you have no information.

| Item Number | Factor and What to Record |
|---|---|
| 1 | Student ID Number<br><br>Begin with first student listed and assign that student a number of 001, next student a 002, next student a 003, and so on, through all of the students at that grade level in that one building |
| 2 | Date of Birth<br><br>Record last two digits of year in which student was born, then two digits for the month in which birth occurred. For example, June 1975 would be recorded as 7506 |
| 3 | Gender<br><br>Male = 1<br>Female = 2 |
| 4 | Grade Level of Student<br><br>Fourth grade = 04<br>Seventh grade = 07<br>Tenth grade = 10 |
| 5 | Ethnicity<br><br>White = 1<br>Black = 2<br>Hispanic = 3<br>Native American = 4<br>Asian = 5 |
| 6 | Father's Occupation<br><br>Professionals = 1<br>Managers, Technicians = 2<br>Skilled Laborers = 3<br>Unskilled Laborers = 4<br>Unemployed = 5 |

7 Father's Level of Education

| | |
|---|---|
| Did not graduate from high school | = 1 |
| Graduated from high school only | = 2 |
| Finished 1-3 years post-secondary | = 3 |
| Graduated from college | = 4 |
| Did post-graduate work | = 5 |

8 Mother's Occupation

| | |
|---|---|
| Professionals | = 1 |
| Managers, Technicians | = 2 |
| Skilled Laborers | = 3 |
| Unskilled Laborers | = 4 |
| Housewife | = 5 |
| Unemployed | = 6 |

9 Mother's Level of Education

| | |
|---|---|
| Did not graduate from high school | = 1 |
| Graduated from high school only | = 2 |
| Finished 1-3 years post-secondary | = 3 |
| Graduated from college | = 4 |
| Did post-graduate work | = 5 |

10 Number of Siblings

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four or more | = 4 |

11 Position in Family

| | |
|---|---|
| Only child | = 1 |
| Eldest | = 2 |
| Middle | = 3 |
| Youngest | = 4 |

12 Siblings Who Dropped Out of School

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four or more | = 4 |

13 Family Grouping

| | |
|---|---|
| Real mother, real father | = 1 |
| Real mother, step father | = 2 |
| Step mother, real father | = 3 |
| Real mother only | = 4 |
| Real father only | = 5 |
| Extended family | = 6 |
| Foster parents | = 7 |
| Institution | = 8 |

14 Language used most in the home

| | |
|---|---|
| English | = 1 |
| Spanish | = 2 |
| Asian | = 3 |
| European | = 4 |
| Other | = 5 |

15 Estimate of parents' attitude toward education

| | |
|---|---|
| Very Positive | = 1 |
| Positive | = 2 |
| Neutral | = 3 |
| Negative | = 4 |
| Very Negative | = 5 |

16 Area or community in which the student resides

| | |
|---|---|
| Rural | = 1 |
| Small Town | = 2 |
| Small City | = 3 |
| Suburban | = 4 |
| Large City Urban | = 5 |
| Inner City Urban | = 6 |

17 Number of schools attended by the student during past five years

| | |
|---|---|
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four | = 4 |
| Five or more | = 5 |

18 Student's scores on norm-referenced standardized achievement tests in Reading

| | |
|---|---|
| Below 20th percentile | = 1 |
| Between 21st and 45th %ile | = 2 |
| Between 46th and 60th %ile | = 3 |
| Between 61st and 80th %ile | = 4 |
| Over 80th percentile | = 5 |

19 Student's score on norm-referenced Intelligence or Aptitude test

| | |
|---|---|
| Below 80 | = 1 |
| 81 to 90 | = 2 |
| 91 to 110 | = 3 |
| 111 to 120 | = 4 |
| Above 120 | = 5 |

20 Number of courses failed last school year (1987-88)

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four | = 4 |

21 Age relative to other students in same grade level

| | |
|---|---|
| Two years younger than others | = 1 |
| One year younger than others | = 2 |
| Same age as others | = 3 |
| One year older than others | = 4 |
| Two years older than others | = 5 |

22 Number of times this student has been retained in grade (i.e., held back)

| | |
|---|---|
| Never | = 0 |
| One | = 1 |
| Two | = 2 |
| Three or more | = 3 |

23 Number of days student was absent during the 1987-88 school year

| | |
|---|---|
| 10 or less | = 1 |
| 11 to 20 | = 2 |
| 21 to 30 | = 3 |
| 31 to 40 | = 4 |
| 41 or more | = 5 |

24 Number of times student was suspended during 1987-88 school year (in-school or out-of-school suspension)

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four or more | = 4 |

25 Number of times student was expelled during 1987-88 school year

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |

26 Number of extra-curricular activities (i.e., school sponsored) in which student participates

| | |
|---|---|
| None | = 0 |
| One | = 1 |
| Two | = 2 |
| Three | = 3 |
| Four or more | = 4 |

27 Teacher's estimate of the student's sense of self esteem

| | |
|---|---|
| Very negative | = 1 |
| Negative | = 2 |
| So-So/In Between | = 3 |
| Positive | = 4 |
| Very positive | = 5 |

28 Average grades student received last year

| | |
|---|---|
| F | = 0 |
| D | = 1 |
| C | = 2 |
| B | = 3 |
| A | = 4 |

29 Has the student changed his or her place of of residence during the past year?

No = 0
Yes = 1

30 Has the student changed the school that he or she attends during the past year?

No = 0
Yes = 1

31 Have either of the student's parents had a major change in their health status during the past year?

No = 0
Yes = 1

32 Has the student had either a father or mother die during the past year?

No = 0
Yes = 1

33 Did a parent attempt suicide during the past year?

No = 0
Yes = 1

34 Did a parent lose his or her job during the past year?

No = 0
Yes = 1

35 Did the student's parents go through a divorce or separation during the past year?

No = 0
Yes = 1

36 Did the student have a close friend who died during the past year?

No = 0
Yes = 1

37 Did the student experience a serious illness or accident during the past year?

No = 0
Yes = 1

38 Did a brother or sixter die during the past year?

No = 0
Yes = 1

39 Was the student dropped from an athletic team during the past year?

No = 0
Yes = 1

40 Did the student attempt suicide during the past year?

No = 0
Yes = 1

41 Did a pregnancy occur during the past year?

No = 0
Yes = 1

42 Is there evidence that the student has been using drugs or engaged in substance abuse of any kind during the past year?

No = 0
Yes = 1

43 Is there evidence that the student has been selling or "pushing" drugs of any kind during the past year?

No = 0
Yes = 1

44 Is there evidence that anybody in the family has been using drugs or engaged in substance abuse of any kind during the past year?

No = 0
Yes = 1

45 Is there evidence that the student has been drinking alcohol during the past year?

No = 0
Yes = 1

46 Is there evidence that either parent has been drinking excessively or is an alcoholic during the past year?

No = 0
Yes = 1

47 Is there evidence that the student has been arrested for driving while intoxicated during the past year?

No = 0
Yes = 1

48 Is there evidence that the student has been arrested or convicted for any illegal activity during the past year?

No = 0
Yes = 1

49 Has the student been diagnosed as being in a Special Education category?

No = 0
Learning Disabled = 1
Mentally Retarded = 2
Physically Handicapped = 3
Deaf = 4
Blind = 5
Other = 6

50 Has the school provided this student special teachers?

No = 0
Yes = 1

51 Was this student placed in a class that was smaller than typical for instructional purposes?

No = 0
Yes = 1

52 Has this student been provided computerized instruction?

No = 0
Yes = 1

53 Has this student been referred to special education for diagnosis or instruction?

No = 0
Yes = 1

54 Has this student been placed in lower track courses or groupings?

No = 0
Yes = 1

55 Has the school provided individualized instruction to this student?

No = 0
Yes = 1

56 Has the school provided flexible scheduling for this student?

No = 0
Yes = 1

57 Has the school provided tutoring or other special assistance to this student?

No = 0
Yes = 1

58 Has the school provided extra homework for this student?

No = 0
Yes = 1

59 Has the school provided extra opportunities for parental involvement for this student?

No = 0
Yes = 1

60 Has the school provided extra instruction in the basic skills for this student?

No = 0
Yes = 1

61 Has the school referred this child to the psychologist or for other special services?

No = 0
Yes = 1

62 Has the school provided special instructional materials to this student?

No = 0
Yes = 1